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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,630	03/23/2004	Zhiwei Dong	SIL.0004US	2632

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EXAMINER

LE, DINH THANH

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,630

Applicant(s)

ZHIWEI DONG

Examiner

DINH T. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/12/04</u> . | 6) <input type="checkbox"/> Other: ____ |

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DETAILED ACTION

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections

Claim Rejections - 35 USC § 112

At Claims 27-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not understood what the “storage medium” and “instructions” on lines 1-2 are, how the instructions can be “executed” to perform the functions of effectiving a time-period, enabling a clock, sampling an output, deriving a binary signal and developing a tuning signal since the present specification does not disclose the detailed structure of the medium and the instructions or show how they perform the reciting functions. Clarification is required.

Claims 2-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 2, the recitation “tuning error signal” on line 2 is confusing because it is unclear if this is additional “tuning error signal” or further recitation of the previously claimed “tuning error signal” on line 11 of claim 1.

In claim 3, the recitation “tuning error” on lines 3 and 4 is confusing because it is unclear if this is additional “tuning error” or further recitation of the previously claimed “tuning error” on line 2. The same is true for reciting “sampler” on line 3 of claim 4, and “the counter” on line 7 of claims 5 and 34.

In claim 5, the recitation “the first circuit” and “the second circuit” on line 2 lacks clear antecedent basis. Also, it is not understood what the “the first value” and “second value”, “first direction” and “second direction” are and how the error signal can “assume” these values”. The same is true for claims 8, 35 and 40.

In claim 4, the recitation “the first circuit” and “the second circuit” lacks clear antecedent basis and it is unclear where they come from.

In claims 6 and 9, the recitation “reference voltage” on line 6 is confusing because it is unclear if this is additional “reference voltage” or further recitation of the previously claimed “reference voltage” on line 2. The same is true for reciting “tuning error signal” on line 4 of claims 7 and 10, and “subsequent tuning signals” on line 5 of claim 20.

In claim 8, the recitation “the tuning voltage” on line 4 lacks clear antecedent basis.

In claim 11, the recitation “the course” on line 3 lacks clear antecedent basis. It is not understood what the “digital tuning signals”, “final digital tuning signal” and “ideal digital tuning” are, where they come from and how digital tuning signal can be “converged”. The same is true for claims 20, 22 and 38.

In claim 13, it is unclear what the “time period” on line 2 is, how it can be related to a master tuning element and how this period can be “effected”.

In claim 15, the recitation “the tuning voltage” lacks clear antecedent basis. It is unclear where it comes from. The recitation “master controllable component” is confusing because it is unclear if this is additional “component” or further recitation of the previously claimed “tuning element” on line 3 of claim 13. The same is true for reciting “corrected tuning voltage “ in claim 16 and “slave controllable component” in claim 17.

In claim 20, it is not understood what the “polarity” and “magnitude” of correction are, how the subsequence tuning signals can incorporate a correction. The recitation “correction” on lines 7-8 is confusing because it is unclear if this is additional “correction” or further recitation of the previously claimed “correction” on line 6.

In claim 27, it is not understood what the “medium” and the “instructions” are how the instructions can recognize the “tuning elements” and “clock” since there is no structural relationship between them, where the tuning elements and clock come from and how the instruction can perform the functions of effecting a time-period, enabling a clock, sampling an output, deriving a binary signal and developing a tuning signal, and how this limitation is read on the preferred embodiment or seen on the drawings. The same is true for claims 28-30.

The remaining claims include unclear recitation and antecedent basis problems as stated above. They should be reviewed, clarified or corrected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-42 are rejected under 35 USC 102 (e) as being anticipated by Gehring et al (US 6,842,710).

Gehring et al discloses in figures 1A, 2, 3 and 4A-4B a tuning circuit comprising:

- a master Gm-C circuit (270) comprising a tunable element (275), wherein the master Gm-C circuit is configured to provide a waveform that is dependent on a tuning signal (282) that is applied to the tunable element (275);
- a precision signal generator (290) to provide a precision signal;
- a sampler (250) having a first input coupled to the waveform from the master Gm-C circuit, a second input coupled to the precision signal, and an output to provide a tuning error signal (282); and
- a tuning control stage (240) having an input coupled to the output of the sampler and having an output to provide the tuning signal to the master Gm-C circuit and to the tunable Gm-C circuit (slave circuit in Figure 4B).
- wherein the sampler (250) provides a tuning error signal that is dependent a relationship between the generator (290) and waveform provided by the filter (270)
- wherein the recitation “first value”, “second value”, first direction” and “sceond direction” are shown on Figures 2 and 4A of Gehring et al in which the comparator 230, Figure 2) generates output signal having values and sign (directions) depending upon the condition between its input terminals.
- wherein the comparator (230) having a first input coupled to a reference voltage (220, 225) and a second input coupled to the time constant circuit (410, 420, Figure 4A).

- wherein the control stage (240) providing a sequence of digital tuning signals to select the transistors of the switched resistors (410) in Figures 4A-4B .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43-48 are rejected under 35 USC 103 (a) as being unpatentable over Kiansuh et al (US 5,715,529) in view of Gehring et al (US 6,842,710).

Kiansuh et al discloses in Figure 1 a receiver circuit comprising:

- a LNA (RF);
- a mixer (M1, M2);
- a demodulator (DEM); and
- a filter (LPF) coupled to the demodulator (DEM).

However, Kiansuh et al does not disclose that the filter (LPF) is tunable and have the structure as recited in claim 1.

Gehring et al teaches a filter circuit in Figures 1 to 4A-4B comprising all of the limitations of claim 1 as stated above for calibrating the time constant of the filter to overcome incidences of wide tolerance in passive components, see the Abstract.

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It would have been obvious to a person having skill in the art at the time the invention was made to employ the filter taught by Gerhing et al in the circuit of Kiansuh et al for the purpose of calibrating the RC time constant of the filter to overcome incidences of wide tolerance in passive components Implemented in integrated circuit, see the Abstract.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY CALLAHAN can be reached at (571) 272-1740.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DINH LE
Primary Examiner